

REMARKS

Claims 1-23 are now in the application. By this Response, claim 1 and 6 have been amended. Support for the amendment to claim 1 is found at least at page 8, lines 1 – 8, and at page 5, lines 28 – 30, of Applicants' disclosure. Support for the amendment for claim 6 is found at least at original claim 7. Support for added claim 23 is found at least at page 6, lines 9-10, of Applicants' disclosure. Claims 19-22 have previously been withdrawn as being directed to a non-elected group. In addition, the Office Action has withdrawn claims 3-5, 7-10, and 14-17. No new matter has been entered.

Applicants respectfully request that method claims 19-22 be rejoined upon the allowance of claims 1-18 and 23 because claims 19-22 recite a method of preparing the polyelectrolyte complex as claimed in claim 1. Claims 19-22 depend, directly or indirectly, from claim 1 and include, thus, all of the features of claim 1. See MPEP § 821.04(b) - Rejoinder of Process Requiring an Allowable Product.

Further, Applicants respectfully submit that the withdrawal of claims 3-5, 7-10, and 14-17 has been made in error and that these claims should be rejoined and examined. Claim 3, for example, depends on claim 2, but recites, of course, additional features. As such, claim 3 is necessarily directed to an elected species because of its dependence on claim 2. Claim 5, as another example, recites the elected species vinylimidazole and N-vinylpyrrolidone. Claim 7, as yet another example, recites the same features a), b), c), and d) that are recited in claim 6, albeit with a narrower range for the monomers. As such, the erroneously withdrawn claims 3-5, 7-10, and 14-17 recite additional features and/or narrower ranges, but are not directed to different species.

Moreover, Applicants note that the October 30, 2008 Restriction Requirement indicated, at page 3, line 19, that claims 1-22 are generic.

Claims 1, 2, 6, 11-13, and 18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,482,394 to Schehlmann et al.

The Office Action asserts, at page 4, that the quaternary copolymers of vinylpyrrolidone-vinylimidazole taught at col. 7, lines 35-36, of Schehlmann can reasonably be considered to correspond to copolymer A1 recited in original claim 1.

Schehlmann relates to pump sprays, pump foams and leave-on hair treatment compositions, all of which are free from propellant gas and comprise anionic and cationic polymers. The cationic polymers can be selected from a plethora of different polymer classes (col. 2, line 8 to col. 7, line 44). Whereas table I in columns 9 and 10 discloses concrete formulations on the basis of cationic polymers, only the copolymers with INCI names polyquaternium-16, -44 and -46 are based on vinylimidazole. Nevertheless, as can be seen from the attached technical information "Polymeric Luviquat® grades", those copolymers comprise vinylimidazole only in quaternized, i.e., charged form. Claim 1, as amended, recites vinylimidazole and/or a derivative thereof in at least partially uncharged form.

Thus, Schehlmann fails to suggest all of the features of independent claim 1.

Claims 1, 2, 6, 11-13, and 18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. 4,668,508 to Grollier et al.

The Office Action asserts, at page 6, that the quaternary vinylpyrrolidone/vinylimidazole polymer, such as BASF's luviquat FC 905, taught at col. 7, lines 35-36, of Grollier can reasonably be considered to correspond to copolymer A1 recited in claim 1.

Grollier suggests a composition for the hair that contains at least one cationic polymer having a molecular weight of between 500 and 3000,000, at least one anionic polymer having a molecular weight of between 500 and 3,000,000, at least one sugar and at least one salt in a cosmetically acceptable medium. In examples 10, 16 and 20 relied on by the Office Action, LUVIQUAT FG 905 is employed as a cationic polymer. As can be seen from the attached technical information "Polymeric Luviquat® grades," LUVIQUAT PC 905 is a copolymer of vinylpyrrolidone and quaternized vinylimidazole.

Applicants respectfully disagree with the assertion at page 6, last line to page 7 line 1, of the Office Action that Applicants' disclosure teaches that Luviquat 905 is a preferred cationic polymer A1). The cited passage on page 32, lines 27 – 30, of Applicants' disclosure refers to cosmetically or pharmaceutically acceptable polymers which differ from the copolymers that form the polyelectrolyte complex. This is clearly set forth at page 32, lines 21 – 24 of Applicants' disclosure. Accordingly, the polymers taught at page 32, lines 27-30, are only used as additional cosmetic or pharmaceutical ingredients.

Further, as set forth in the attached technical information "Polymeric Luviquat® grades," LUVIQUAT FC 905 contains 95 mol% quaternized vinylimidazole ($y = 9.5$) and only 5 mol% vinylpyrrolidone ($x = 0.5$), which corresponds to about 96 % by weight of vinylimidazole monomer units and about 4 % by weight of vinylpyrrolidone monomer units. The polymers A1) with cationogenic groups used according to claim 1 comprise, in copolymerized form, 1 to 70 % by weight of vinylimidazole and/or a derivative thereof and 30 to 99 % by weight of at least one N-vinyl lactam.

It is the object of the claimed subject matter to provide a product with a complex profile of properties. The polymers shall have good film-forming properties and also permit adjustment of the rheological properties of products on the basis of those polymers. Desired are clear preparations, especially for use in hair cosmetics having good styling properties and no tackiness (see, e.g., Applicants' disclosure at page 3, lines 33 - 42). This object is achieved by polyelectrolyte complexes which comprise a copolymer A1) with cationogenic groups based on vinylimidazole, but no anionogenic or anionic groups and a carboxylic-acid-group containing polymer A2). In the applied citations there is no incentive for a person skilled in the art to employ a copolymer which comprises vinylimidazole in at least partially uncharged form in such polyelectrolyte complexes, especially not with the amount of monomers a) and b) as defined in amended claim 1. The good application properties of the polyelectrolyte complexes according to the claimed subject matter are demonstrated by the examples. Table I on page 44 of the Applicants' disclosure shows the composition of the polymers A1). Comparative example 2 comprises DMAPMAM (Dimethylaminopropylmethacrylamide) instead of vinylimidazole.

Comparative example 5 comprises only quaternized, i.e., charged vinylimidazole (QVI). The copolymers containing cationogenic groups in Table 1 were then reacted with two different commercially available acid-group-containing polymers A2) (1. hydrophobic modified crosslinked polyacrylates = Carbopol® Ultrez 21 from Noveon and 2. acrylic acid/Beheneth-26 methacrylate copolymers = Aculyn® 28 from Rohm und Haas) to give polyelectrolyte complexes and formulated to give gels. The performance properties are shown in Table 2, The grade awarded was determined according to the following scale: 1 very good, 2 satisfactory, 3 unsatisfactory. As can be seen, the polyelectrolyte complexes on the basis of copolymers A1) according to the invention show very good balance of properties.

Moreover, the applied citations the applied citations fail to suggest features corresponding to an excess of anionic/anionic groups, as recited in added claim 23. Schehlmann teaches, at col. 9, lines 1-5, that cationic polymers are used in a concentration of 0.05 to 5% and anionic polymers are used in a concentration of 0.05 to 7% by weight. Schehlmann does not correlate the weights to the molar mass of the polymers. Thus, the concentrations taught in Schehlmann are applicable to any cationic and any anionic polymer disclosed therein, regardless of the molar mass, and, thus, the molar concentration of cationic and anionic groups in the final composition. In other words, 5% of a cationic polymer and 7% of an anionic polymer may correspond to an excess of cationic groups if the monomers of the anionic polymer have a large molar mass, but would correspond to an excess of anionic groups if the monomers of the anionic polymer have a small molar mass. Accordingly, Schehlmann does not recognize that the relative amounts of cationic versus anionic groups is a result-effective variable. Similarly, Grollier suggests, at col. 2, lines 9-11, that the weight ratio of cationic polymers to anionic polymers is between 0.1 and 40. Grollier fails to suggest any preference for an excess of anionic groups. Additionally, the ranges suggested in Grollier are for the weights of the polymers and do not take into account the ratio of cationic to anionic groups.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 22-0185, under Order No. 13111-00030-US1 from which the undersigned is authorized to draw.

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Respectfully submitted,

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